

CLAIM AMENDMENTS

1. (canceled)

1 2. (currently amended) The method according to claim 13
2 ~~, characterized in that~~ wherein after cutting the strip sample
3 ~~[[1a]]~~ from the oncoming continuous rolled strip, the new strip
4 leading end is deflected downwardly below the inspection table
5 ~~[[11]]~~ and wound on an upper coiling mandrel ~~[[20]]~~ or a lower
6 coiling mandrel ~~(21) of the coiling station (18)~~ lying below the
7 plane of the inspection table ~~[[1]]~~.

1 3. (currently amended) The method according to claim 2,
2 ~~characterized in that~~ wherein the strip samples ~~[[1a]]~~ are ~~braked~~
3 arrested on the inspection table ~~[[11]]~~ by a belt conveyor
4 ~~[[17]]~~ integrated in the inspection table ~~[[11]]~~.

1 4. (currently amended) The method according to claim 2
2 wherein ~~1, characterized that~~ a ~~[[wound]]~~ coil ~~[[25]]~~ wound upon
3 the upper coiling mandrel ~~[[20]]~~ is swung through 180° during the
4 continuous rolling operation and is finish wound to a predetermined
5 maximum coil diameter ~~[[25a]]~~.

1 5. (currently amended) The method according to claim 2
2 ~~wherein 1~~ characterized in that a ~~[[wound]]~~ coil ~~[[25]]~~ wound
3 ~~[[up]]~~ on the lower coiling mandrel ~~[[21]]~~ is lowered and carried
4 off parallel to ~~[[the]]~~ a coiling mandrel axis.

6. (canceled)

1 7. (currently amended) The apparatus according to claim
2 ~~6~~ characterized in that 14, further comprising at ~~[[the]]~~ an inlet
3 ~~[[27]]~~ to the coiling station coiler ~~18 a deflection unit (10) is~~
4 ~~provided for deflecting the metal strip (1) to~~ at least one coiling
5 mandrel ~~[[20; 21]]~~.

1 8. (currently amended) The apparatus according to claim
2 ~~6, characterized in that 14 wherein the coiling station 18 is~~
3 ~~constructed of a respective coiler has an~~ upper coiling mandrel
4 ~~[[20]]~~ mandrel and lower coiling mandrel ~~[[21]]~~ arranged
5 eccentrically within a rotating frame ~~[[28]]~~ below the plane of
6 the inspection table ~~[[11]]~~.

1 9. (currently amended) The apparatus according to claim
2 ~~8 characterized in that wherein~~ the upper coil mandrel ~~[[20]]~~ and
3 the lower coil mandrel ~~[[21]]~~ lie on a diameter through the
4 ~~control a rotation~~ axis ~~[[28a]]~~ of the rotating frame ~~[[28]]~~.

1 10. (currently amended) The apparatus according to
2 claim ~~7 characterized in that~~ 9 wherein the diameter runs at an
3 angle to the horizontal of about 15° to 25°.

1 11. (currently amended) The apparatus according to
2 claim ~~6 characterized in that~~ 8 wherein the rotating frame $[(28)]$
3 for the coiling mandrels $[(20; 21)]$ is journaled for rotation on
4 rotatably driven support rollers $[(2a)]$.

1 12. (currently amended) The apparatus according to
2 claim ~~6 characterized in that~~ 8 wherein the lower coiling mandrel
3 $[(21)]$ has juxtaposed with it a pressing roller arm $[(30)]$
4 swingable in and out and provided with a pressing roller $[(31)]$.

1 13. (new) A method of producing, coiling, and
2 inspecting steel strip in a mill where the strip issues
3 continuously in a travel direction from a downstream end of a
4 rolling line and can be wound up there on a coiler, the method
5 comprising the steps of:

6 providing an inspection table downstream of the rolling
7 line with a planar support surface of the table aligned with the
8 downstream end of the rolling line and the strip emerging
9 therefrom;

10 orienting the coiler below a plane of the table support
11 surface;

12 during normal rolling deflecting the strip downward to
13 the coiler and reeling the strip up on the coiler; and
14 for inspection of the strip
15 transversely cutting the strip to produce a new
16 leading end,
17 feeding the strip starting at the new leading end
18 toward the table without substantial
19 deflection,
20 transversely cutting the strip upstream of the new
21 leading end to form a strip sample separate
22 from the strip emerging from the rolling line
23 conducting the strip sample to the table and
24 arresting and inspecting the strip sample on
25 the table surface while deflecting the strip
26 emerging from the line back down to the coiler
27 to continue coiling it up.

1 14. (new) An apparatus for producing, coiling, and
2 inspecting steel strip in a mill where the strip issues
3 continuously in a travel direction from a downstream end of a
4 rolling line and can be wound up there on a coiler, the apparatus
5 comprising:

6 an inspection table downstream of the rolling line with a
7 planar support surface of the table aligned with the downstream end
8 of the rolling line and the strip emerging therefrom, the coiler
9 being oriented below a plane of the table support surface;

10 means for transversely cutting the strip upstream of the
11 coiler and downstream of the downstream end of the rolling line;
12 means connected to the coiler and to the cutting means
13 for
14 for normal rolling deflecting the strip downward to the
15 coiler and reeling the strip up on the coiler; and
16 for inspection of the strip
17 transversely cutting the strip to produce a new
18 leading end,
19 feeding the strip starting at the new leading end
20 toward the table without substantial
21 deflection,
22 transversely cutting the strip upstream of the new
23 leading end to form a strip sample separate
24 from the strip emerging from the rolling line
25 conducting the strip sample to the table and
26 arresting and inspecting the strip sample on
27 the table surface while deflecting the strip
28 emerging from the line back down to the coiler
29 to continue coiling it up.

Remarks:

This amendment is submitted in an earnest effort to advance this case to issue without delay.

The specification has been amended to eliminate some minor obvious errors. No new matter whatsoever has been added.

The claims have been amended to overcome the formal objections largely resulting from the fact that they were translated from European practice. In addition the main method and apparatus claims have been completely replaced with US-style claims specifically drafted to overcome the formal and art rejections.

As amended, both the method and apparatus claims recite a system where the strip issuing from the downstream end of a rolling line is normally deflected somewhat downward to a coiler where it is wound up. In addition an inspection table has a planar support surface that is aligned with the downstream end of the rolling line, although during normal operation the strip is actually deflected downward to the coiler. To inspect the strip, it is cut transversely upstream of the coiler to create a new strip end, and the strip is then briefly not deflected, but instead is fed straight out to the inspection table. This is particularly convenient since the strip is in fact planar and flat as it issues from the rolling line. Once a sufficiently big strip sample has

been fed out onto the table, the strip is again cut and is again deflected downward for continued coiling. While the strip is being coiled, the sample cut out of it can be inspected.

With this system, therefore, strip production can remain continuous. Since as described in the dependent claims, the coiler has two separate winding mandrels, it is a simple matter to cut out the sample during changeover from one mandrel to the other, and in fact such sampling allows the changeover from one mandrel to the other to take place without stopping the mill at all. Thus it is in theory possible to take a sample for each coil that is produced so that upstream adjustments can be made when the inspection determines that the strip is tending to an out-of-range dimension, for instance.

This is in sharp distinction to the systems of the two cited references, namely US 4,296,623 of Elbe and US 6,502,445 of Drigani.

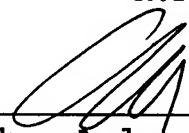
In Elbe there would appear to be a coplanar rolling line and inspection table, but there is nothing like the downward deflection of the strip for coiling. To test the strip, Elbe moves coils around, so that it is necessary to unwind a coil, flatten out part of it, cut it off, and so on. This clearly bears no resemblance to the elegant solution now defined in claims 13 and 14 of the instant invention. Clearly Elbe all alone cannot form a rejection of the amended claims.

In Drigani there is a dual-mandrel coiler, but nothing resembling the inspection system of this invention. Thus Drigani and Elbe together cannot form a valid §103 rejection of the amended claims.

For these reasons the claims in the case are clearly in condition for allowance and passage to issue. Notice to that effect is earnestly solicited.

If only minor problems that could be corrected by means of a telephone conference stand in the way of allowance of this case, the examiner is invited to call the undersigned to make the necessary corrections.

Respectfully submitted,
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Enclosure: Corrected version
Substitute Specification
Substitute Abstract